

State Advisory Board

BACT Clearinghouse

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Introduction

Background

The Clean Air Act (CAA) prescribed emission control and pollution prevention measures through different provisions of the act for new or modified sources of air emissions. New Source Review (NSR) requirements are case-by-case decisions or determinations based on the requirements of the applicable regulation. NSR Best Available Control Technology (BACT) requirements apply to major new and modified sources located in attainment areas (areas attaining the National Ambient Air Quality Standards – NAAQS), and subject to Prevention of Significant Deterioration (PSD) permitting requirements. NSR Lowest Achievable Emission Rate (LAER) requirements apply to major new and modified sources located in non-attainment areas (areas that do not meet NAAQS). RACT determinations may also be made on a case-by-case basis, but typically RACT requirements have been prescribed by State and local rules and regulations for existing sources.

RBLC – RACT/BACT/LAER Clearinghouse

A BACT/LAER Clearinghouse was established in 1981 to provide the best available information to the state and local regulatory agencies to assist them in making control technology determinations in a nationally consistent manner. The 1990 Clean Air Act Amendments (CAAA) added RACT determinations and the clearinghouse name changed to RBLC.

The RBLC is primarily a Clearinghouse for air pollution control and pollution prevention technology determinations required for major new and modified sources subject to NSR permitting requirements. The data in the Clearinghouse is not limited just to sources subject to these requirements, and noteworthy prevention and control technology decisions are included in the RBLC even if they are not related to RACT, BACT, LAER decisions.

The RBLC:

- Provides State and local air pollution control agencies, industry, and the public with current information on case-by-case control technology determinations that are made nationwide, and
- Promotes communication, cooperation, and sharing of control technology information among permitting agencies. The RBLC's primary vehicle for sharing control technology information is the RBLC Web.

About 33% of users are permitting agency staff, while the remaining 67% consists of industry, consultants and lawyers preparing NSR permit applications or searching for good technology options for their air pollution abatement problems.

Mission Statement

PURPOSE:

- To establish guidelines for updating the functionality of the BACT Clearinghouse

IN A WAY THAT:

- Provides consistent information
- Improves the data content and the quality of information
- Determines how EPA maintains and updates its BACT Clearinghouse
- Determines feasibility of a establishing a Virginia State BACT Clearinghouse website (considering current BACT determination practice, legal authority for the establishment of the Clearinghouse and the Web site, and recommendations on how to improve BACT determinations)

SO THAT:

- The BACT Clearinghouse is better understood and more user friendly

RACT/BACT/LEAR Clearinghouse - RBLC

RBLC Functionality

The data entered into RBLC is provided by State and local agencies. Submittals represent these agencies' permitting and reporting efforts for major new sources and modifications to existing major sources. Submittals to the RBLC are, for most part, voluntary. Only LAER determinations must be submitted to the RBLC.

Year	1997	1998	1999	2000	2001
Number of Determinations	168	159	163	257	320

As shown in the above table the number of submittals increased in 2000 and again in 2001. Also, EPA Region 4 surpassed Region 9 as the highest contributor for the five-year period with a total of 243 determinations. Region 3, which includes Virginia, added 15 new determinations in 2001. Virginia added 6 of those 15 in 2001, and has added a total of 15 determinations from 1997 to 2001.

The biggest challenge identified with RBLC functionality is its user friendliness. Although it is a web-based application, it has been difficult to access, search, and identify needed information, and to prepare necessary and usable reports from the database.

Three major problem areas have been identified:

1. **Completeness and comprehensiveness:** The RBLC does not contain all BACT and LAER determinations and, for those determinations that are included, the information is incomplete. Most submissions are voluntary and it is difficult to collect missing information. Approximately 60% of the permit data nationwide is missing from the RBLC data base.
2. **Compliance Verification:** The RBLC information usually cannot confirm that a source was constructed and that compliance with the emission limits indicated in the data base has been demonstrated. Although, data fields are provided, permitting agencies rarely update the RBLC data base to indicate that compliance with the emission limits in the permit have been verified.
3. **Cost Information:** Although data fields are provided, virtually no cost information has been entered or provided by agencies.

In addition to these major issues, questions have been raised concerning the RBLC role in presenting new and emerging air pollution control technologies and the user-friendliness of the RBLC Web. The

EPA conducted five workshops throughout the country in 2001 to get specific feedback about the RBLC functionality. The following is a brief summary of some of those comments, which are pertinent to this report.

List of Action Items from RBLC Workshops

Action Item Description	EPA Status - Response
Option to sort results by permit date in addition to RBLC ID or Facility Name.	Done
Allow generating report including all results instead of 150 at a time.	Done
Make results look the same, regardless of query method.	Under way
Allow user to go straight to process rather than have to go through facility, on the results pages.	Under way
Include better descriptions of the reports rather than Appendix F etc. and add examples.	Under way. Descriptions done, working on examples
Rearrange query options to put the easiest first. Process searches are most useful.	Under way
The RBLC is currently a "permit-centric" database, but should be changed to be more "data-centric". Users should be able to search for processes based on their emissions.	Searches can currently be done by process and pollutant. Working to reinstate the ability to rank by stringency of emission limit, which would help identify the most stringent emission limits.
Queries should be able to reach out to other databases outside RBLC.	Cannot do at this time
Generate stand alone database query software.	Focus for now is to improve web-based queries
Clarify the difference among "In Process," "Ready for Public Display," and "Ready for QA."	Under way
The data entry form should include a check box to indicate where an emission limit was set more stringent than BACT for reasons outside the usual BACT parameters.	Under way
Data entry form is too complex and burdensome for state agencies. EPA should explicitly define which fields are required and which are optional.	Under consideration. Needs more thought/discussion.
BACT determination guidance should be available on the RBLC.	Under way
Add new/emerging technology database to RBLC. EPA must make sure information is kept up to date. Add a list of industry specific feasible control technologies with an appropriate disclaimer.	Under way
Add a disclaimer that the RBLC includes data that may not be BACT. Some say industry uses old RBLC entries to justify less stringent BACT limits.	Under consideration. RBLC is a clearinghouse. BACT is a case-by-case determination.

According to the EPA, the RBLC continues to implement improvements based on the recommendations of the RBLC Subgroup and others, and to make better use of emerging information transfer technology.

Ongoing activities include, improved coordination with EPA Regional Offices for data acquisition and quality assurance, data entry, outreach activity and quality assurance of existing RBLC data base.

VADEQ Experience:

Several interviews were conducted in the Regional Offices of the DEQ with permit writers, engineers and permit managers. The following is a summary of the comments received in the discussions.

RBLC Data:

The RBLC is missing about 60% of the data from the permits that have been issued nationwide. Since the permit data entry is voluntary, except for the four basic information items from each of the permit, the data consistency of the entered data is poor. The four basic items entered by the permitting agencies area:

1. Name of the permitted source
2. Location of the source
3. Pollutants controlled
4. BACT, RACT, LAER determinations

The data base is not comprehensive because other permit related information (other than the four listed above) is missing or incomplete. Quality of the entered data is also questionable as there is no quality assurance or verification of the accuracy and data content.

Data Search:

The RBLC is currently a “permit-centric” data base, or narrow/specific searches for information need to be based on permittee details. A more “data-centric” data base would allow quicker and industry/pollutant specific searches for processes based on their emissions. This would be a more practical approach for industry. Another useful search parameter would be SIC code specific feasible control technologies. There was a live example in a Regional DEQ office where an experienced permit writer familiar with the RBLC struggled for more than half hour just to proceed with the initial screen on the RBLC Web page. Search parameters currently allowed are inadequate.

Data Entry:

Data entry form provided by EPA is too complex and burdensome. The form is four pages long (a copy is provided in Appendix A) and consumes considerable amount of time of a permit writer to just enter the mandatory information. Optional and mandatory fields for data entry are not clearly defined or identified. The DEQ must prepare its own internal data entry form for providing data to the RBLC.

Cost:

Cost of compliance determination is missing from the data base or it is very difficult to estimate. This information is quite important for regulated industries to build a new source and is sometimes vital to determine the feasibility of a new source construction. Permitting agencies seeking this information have to decide what constitutes a “reasonable cost” of control for a new source. Cost of equipment for applicable control technology and its operational cost are quite important to determine viable options for controlling pollutants and feasibility of projects, specially for small businesses.

Use of Information:

There is no confirmation that the permitted source was constructed, and if constructed was in compliance with emission limits. Permitting agencies rarely report test data verifying permitted limits. The entered information is not kept current. Determinations for permits entered, for example, ten years ago may not be relevant now. The permitted source in this example may have implemented improved control technology. The RBLC data base also lacks current new and emerging pollution control and pollution prevention technological information.

A few permit writers observed that they did not have such frustrations with the RBLC. Comments were made that states rather than EPA are at fault for not providing needed information to the RBLC. Virginia DEQ permit writers have to enter multimedia permit data into Comprehensive Environmental Data System (CEDS, discussed in detail later in the report). Observation was also made that the RBLC was good for getting some basic information while determining applicable control technologies. Permit writers needed to review each permit as case-by-case for determining applicable BACT for a new or modified source.

VADEQ – Current Data Management

EPA Grant:

DEQ manages a 105 grant from EPA similar to other states that commits Virginia to provide required data on the EPA's RACT/BACT/LAER (RBLC) Clearinghouse. The EPA 105 grants provide basic operating funds to states to manage their air programs. The required information (facility name, location, pollutants controlled, and BACT determinations for PSD, LAER, and State Major sources) must be communicated to EPA within 60 days of the permit issuance. This effort is part of Clean Air Act amendments mandating the maintenance of RBLC information through 105 grants to states.

Data Entry:

The required information is a very small subset of the information requested on the EPA RBLC Clearinghouse Form. Submission of the additional information on the four-page form is voluntary; however, EPA continues to seek the missing data from states. Virginia entered 6 determinations in 2001, compared to 2 in 2000. In the beginning of 2002, the DEQ had a backlog to enter on to the RBLC, but the DEQ recently hired staff to assist with the entries. Presently, DEQ has entered 12 determinations for 2002.

DEQ staff is entering the 2002 information using EPA's online system. EPA had security problems with the online system last year and is now offering online data entry to states. The online information entered by states is quality assured for quality control and made available to BACT Clearinghouse users immediately. It was noted that RBLC users were comprised approximately - 65% regulated community, 25% regulators, and 10% other.

In collecting the required information, DEQ permit writers provide the basic information through a Source Action Report (SAR) that is submitted as a hard copy. These field office reports are evaluated for quality control. DEQ handles between 900-1200 permits annually with approximately 30-50 of them requiring this type of additional data entry. It recently took a new staff member approximately 2-1/2 days to enter one complete RBLC record accessing 3 to 4 DEQ documents.

Permit writers are also required to prepare data for a DEQ internal online database called Comprehensive Environmental Data System (CEDS). It was noted that field offices handle data entry differently with some assigning a data manager and others relying on permit writers to enter the data. DEQ is very interested in determining whether or not the CEDS database, which is quite comprehensive, can be utilized to provide information for the RBLC Clearinghouse online network.

State Clearinghouse Experiences

California:

The BACT Clearinghouse is managed by the Air Resources Board (ARB) under the direction of California Air Pollution Control Officers Association (CAPCOA) Engineering Managers Committee. Products available at this area of the website include a searchable database for California BACT and LAER determinations dating back to 1985.

Information on determinations is submitted to the Clearinghouse on a voluntary basis by California districts. Therefore, the database does not represent a comprehensive compilation of BACT determinations. The database is searchable using source categories, by Air Quality Management Districts, and by permitted sources. The Clearinghouse is believed to be more user friendly than EPA's RBLC, however, it suffers the same drawbacks of lack of updated information, data comprehensiveness and completeness.

North Carolina:

North Carolina is not contemplating its own BACT Clearinghouse. It feels that the RBLC gives a good starting point for BACT determinations. A permit writer will need to follow by telephone contact with other agencies or with permitted sources to get specific details and make case-by-case determinations.

VADEQ Information Management and Transmission

CEDS – Comprehensive Environmental Data System

Virginia has created its own and quite comprehensive data base of multimedia permits and compliance actions. All permitting information (major or minor) for air pollution control, water pollution control, or waste management is entered into this data base by permit writers. A source action report (SAR) is prepared for each permit and data derived from this report is entered into the CEDS. Compliance action report data is also entered in the CEDS by enforcement section.

CEDS, created in November 1999, is data storage and retrieval system for the state employees use. It is not available to the public. The CEDS data base is Oracle based and it is about 27 mega byte big. CEDS was not designed to be user friendly since it was not designed as a clearinghouse tool. The data base is not searchable and there is no report generation function available. It is primarily used by the DEQ for developing permitting and enforcement actions.

CEDS is based in the Office of Information Systems, however, its maintenance accountability is not quite clear. As such, data entry and data base update functional responsibilities are not well defined. Permit writers are supposed to enter data in CEDS but the task seems to be voluntary.

CEDS and RBLC

Both CEDS and RBLC are Oracle based systems, however, it is not possible to transmit or upload data from CEDS to RBLC electronically. Permit writers manually enter data into CEDS and into RBLC separately as they are not compatible with each other. DEQ personnel need to have CEDS data, Permit information, SAR, and RBLC forms as a part of data preparation and data entry. Once data is entered, only selected DEQ personnel have “write” capabilities to change or update information on RBLC (Virginia input only). DEQ processes more than 1000 minor permit actions and more than 25 major permit actions in a year. Although the volume of minor actions is large, the time consumed by major actions is substantial requiring almost similar resources for both major and minor actions.

RBLC Functionality

As RBLC is based within EPA, VA DEQ can not help much to improve its functionality except for fulfilling its requirement of entering mandatory permit data and information on time and update it regularly. RBLC not only needs more data (data from only 40% of the total permits issued nationwide are entered), but also needs verification of data accuracy and regular updates, which is not within the scope of the DEQ.

A State BACT Clearinghouse based within the DEQ would provide necessary, vital and accurate information to the state permit writers and enforcers.

Virginia State BACT Clearinghouse

Ideal State BACT Clearinghouse

The state BACT Clearinghouse would be based within and managed by the DEQ.

Clearinghouse Contents:

The Clearinghouse would contain PSD, LAER and State Major Source permitting information similar to that submitted to the RBLC, and would also contain State NSR Minor Sources permitting and control application information.

Minor NSR information is probably the most useful component of the Clearinghouse as most permits issued in Virginia fall into this category. Ease of retrieval of Clearinghouse information for Major and Minor sources would make the permitting process streamlined and consistent in every region of the state. This would also help use state resources efficiently by saving time and labor in permitting actions.

Information Management:

Information provided to the State BACT Clearinghouse would be derived from the current CEDS data base. Only air pollution control – permitting and enforcement related information would be transmitted or uploaded from CEDS to the Clearinghouse with the help of IT personnel. This will eliminate manual data entry by permit writers into the Clearinghouse. Another important functional requirement for the new Clearinghouse would be the capability of transferring data from the State BACT Clearinghouse to the RBLC. Thus data entry would be needed only once into the CEDS.

Data Management:

It was observed that the permit writers were entrusted with data preparation and entry into the CEDS and RBLC. It would be more efficient to separate the data entry function from permitting and data flagging functions. This would help free permitting engineers and permit writers for permitting actions for expedited permitting. Permit writers could flag certain data while processing the permits and pass that information on to data entry personnel electronically. This may need some initial training for permit writers and data entry personnel. The systematic data entry would help reduce the current time requirement of 2.5/3 days considerably. Separation of data entry from permitting would also help reduce paperwork and increase efficiency of both permitting and data entry functions.

Information Transfer:

The Information Technology section of the DEQ has the vision for information transfer in the future. Necessary information would be extracted out of CEDS, reformatted and shifted to interested parties, such as RBLC. IT would create “Tables” from data derived from CEDS and those tables would be able to talk to RBLC (no manual input necessary at that point). The same tables would also be utilized for

providing information to the State BACT Clearinghouse. This web enabled data base would have true reporting function and a flattened structure.

Resources:

The DEQ will have to raise its own resources for creating the State BACT Clearinghouse. EPA section 105 grant or other help is not available now to establish the Clearinghouse. The DEQ could certainly try to negotiate with EPA section 105 grant output that would include formation and maintenance of a state Clearinghouse. The DEQ seems motivated to establish the Clearinghouse and would seek funding or other resources aggressively for the cause.

EPA restricts the use of Title V fee funds to service Title V facilities in the state. At present Virginia has about 12% of the total facilities as Title V facilities. Hence, only 12% of the Title V funds could be used for the Clearinghouse data base development and maintenance.

EPA recently announced \$25 million environmental information grants available to states for the purpose of working with EPA to develop the National Environmental Information Exchange Network. The Exchange Network is a joint project for sharing environmental data among EPA, states, and other partners over the Internet.

Legal Issues of the State BACT Clearinghouse

Clearinghouse

There are no statutory limitations for the DEQ to create a State BACT Clearinghouse. California maintains its BACT clearinghouse and is believed to be more user friendly compared to the RBLC.

There are potential legal issues of a State BACT Clearinghouse that need to be addressed on a case-by-case basis. Below are some examples of such issues:

1. BACT evaluation process may revert to a case-by-case determination even when information is available from the State BACT Clearinghouse or from RBLC
2. There could be potential problems with “presumptive” BACT if information contained in the Clearinghouse is considered a final word on control technology requirement for new or modified sources
3. Obligation to comply with BACT determination derived from the State Clearinghouse when a better control technology solution is found elsewhere
4. BACT determination for a source when the RBLC and the State Clearinghouse do not agree with each other for control technology recommendations

Digital Government

Governor's Initiative

The Secretary of Technology established Digital Opportunities Task Force staffed by the Electronic Government Implementation Division in May 2000. The Objective of the Digital Government Program is to support projects that innovatively, effectively and broadly address, the potential improvement of agency, interagency, and intergovernmental operations and government/citizen interaction.

The Governor's initiative includes public access of information through the DEQ web page. As a part of the Digital Government Initiative BACT Clearinghouse information, including information on emissions, control technologies, meaningful interpretations of permit limits, and other air quality related information, could be posted on the DEQ web page. The web enabled Clearinghouse would have true search and report functions. Any confidential information submitted by industry would remain so on the web page.

The web development would involve licensing from Oracle, Microsoft, and other efforts for internal development of data base. DEQ Information Technology does not have cost estimate for developing web enabled Clearinghouse data base, and estimated about a year for such development.

New and Emerging Air Technologies (NEAT)

EPA published a notice in the Federal Register on July 5 (page 44833) seeking Request for Proposal for Cooperative Agreement to Develop NEAT – a Web Data Base for new and emerging air technologies.

Purpose for development of the NEAT data base is to aid industry, contractors, and state and local air permitting agencies with information about innovative air pollution control and pollution prevention technologies. This initiative would also help maintain and improve ambient air quality and public health.

Section 108(h) of the Clean Air Act Amendments (1990) mandating RBLC set up required that EPA made information regarding emission control technology available to states and general public. Clean Air Act Advisory Committee recommended in 1993 that RBLC provide information on new and emerging air pollution prevention and control technologies in addition to NSR permit technology decisions. EPA has concluded that the best way to address this recommendation would be through the establishment of a Web data base on NEAT. NEAT would complement the existing RBLC data base. The technologies would include information on emission controls, pollution prevention, emission and ambient air monitoring, air pollution modeling, and environmental management, tracking, and decision-making approaches.

NEAT will have quality assurance, feedback and maintenance provisions and would be self-sustaining through revenue generation from those seeking information from NEAT.

Conclusions and Recommendations

Conclusions

- RBLC is not user friendly and extraction of information from the EPA data base is quite time consuming
- There is no assurance that the information available from RBLC is reliable, accurate, complete and updated
- RBLC contains only 40% of the permit data and control technology information of total nationwide permitted sources
- Establishment of the State Clearinghouse would be more beneficial to the state DEQ permit writers and compliance personnel while providing effective and timely information to the industry and consultants
- Minor NSR Permitting information along with routine PSD, LAER and State Major permitting information in the State Clearinghouse would be the most desirable data base for the State Clearinghouse as the DEQ processes in excess of 1000 minor permit actions, compared to about 25 major permit actions annually.
- Permit data information preparation and entry management need to be functionally separated
- A web based BACT Clearinghouse would be easily accessible by industry, consultants, and state/local agencies

Recommendations

- ✓ Establish a State BACT Clearinghouse that eliminates the drawbacks of the RBLC
- ✓ Evaluate separating permitting and permit data entry functions, and define clear responsibilities and ownership of the Clearinghouse functions
- ✓ Enter NSR Minor Permit data information in the State BACT Clearinghouse data base
- ✓ Follow Information Technology recommendations for data transformation after extraction from the CEDS and transmitting to RBLC and State Clearinghouse
- ✓ Evaluate and improve process of updating entered data on the RBLC

- ✓ Extract (electronically) information usable out of RBLC, check for quality assurance, and include into the proposed Virginia BACT Clearinghouse
- ✓ Make the State BACT Clearinghouse a part of the Governor's e-government initiative and have the data base information available and usable on the DEQ Web page
- ✓ Seek all available sources for funding to create and maintain the State Clearinghouse including but not limited to:
 - Negotiating 105 grant output to include formation of the Clearinghouse
 - Information technology grant from EPA such as, National Environmental Information Exchange Network Grants
 - General funding and other sources

Appendix 1

The RBLC Data Entry Form